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STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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THE EFFECT OF POVERTY ON HOUSEHOLDS' VULNERABILITY TO HIV/AIDS INFECTION: THE CASE OF BAHIR DAR CITY IN NORTH-WESTERN ETHIOPIA

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ABSTRACT

Though the impact of HIV/AIDS infection on the livelihood of people is well defined, there is no sufficient empirical evidence for the reverse causation. This research aims at investigating the impact of poverty on risk of HIV infection in Bahir Dar City, Ethiopia. Primary data were collected mainly using structured questionnaire. A basic logit model is estimated for three dependent variables and analysed in addition to descriptive analysis. The later shows that poverty in the City is so widespread in terms of both quantitative and qualitative measures. The econometric findings reveal that the non-poor have higher probability of overall susceptibility towards the virus. Our data falls short of supporting the widely held view and our hypothesis that poverty directly contributes to vulnerability to HIV infection. The results call for proper implementation of the national poverty reduction strategy with local government and community participation to tackle poverty. Further, the sexual behaviour of people making them vulnerable to HIV needs to be targeted.

KEYWORDS

Logit regression, Poverty, Sexual behaviour, Vulnerability to HIV/AIDS.

INTRODUCTION

The World is rapidly heading to be more urban. The recent urbanization process is much faster in the developing than in the developed world. By 2050, two-thirds of the population of the developing world is likely to live in urban settings (UNFPA, 2007). The average rate of urbanization in Africa is the highest in the world at 3.97 percent annually (van Renterghem and Jackson, 2009). The positive effects on social and economic development of urbanization have been largely documented. However, rapid and unplanned urbanization in sub-Saharan Africa (SSA) has left many with little access to public goods and prone to various communicable diseases such as HIV/AIDS. Poverty acquires both economic and non-economic connotations. It has been associated, for example, with poor health, low levels of education and inability or unwillingness to work. Poverty is becoming increasingly urban. Urban poverty may be understood as the lack of access to basic needs particularly food, shelter, health, security, basic hygiene, sanitation and water, in addition to economic security (Rae, 2001). One-third of the World's urban residents receive $2 a day (Baker, 2009). This figure almost doubles when it comes to ssa and over 75 percent for Ethiopian urban dwellers.

The most threatening and dangerous health (of course economic and social) problem which has been controversially related to poverty is the HIV/AIDS infection. Out of the 33.4 million HIV positive people worldwide, 1.5 million are Ethiopians (UNAIDS, 2010). In 2008, over 0.88 million Ethiopian children below the age of 17 lost one or both of their parents to HIV/AIDS (Habte, 2008). A number of underlying factors contribute to the spread of HIV in Ethiopia, including poverty, illiteracy, widespread transactional sex, gender disparity, population movement (including rural to urban migration) and harmful cultural and traditional practices. The epidemic's adverse consequences (death, illness, the burden of caring for those infected, and loss of productivity) in turn exacerbate poverty, increase the numbers of orphans and are disrupting the social fabric of the community and the nation at large (FHAPCO, 2008). The virus has ruined the country's active labour force as over 90 percent of the infections strike people between ages 15 and 49 (Habte, 2008).

This study focuses on Bahir Dar, one of the fastest growing cities of Ethiopia. With a population of over 210,000 in 2007, the City is serving as the political capital of the Amhara National Regional State, the second most populous region in the country. Following the decision of being capital, the City's population has grown tremendously, stimulated primarily by migration. That has been translated into expansion of the two evils – HIV/AIDS and poverty. The HIV/AIDS prevalence rate in City was once reported as the highest in the country. A point estimate in 2009 showed that the prevalence rate in the city was 13.5% (11.8% for males and 15.4% for females), far higher than the regional average of 3.6% (BoFED, 2009). Although no dependable figures are obtained, the poverty situation in the city has also worsened as can be seen from the expansion of slums. The study, thus, attempts to find any significant effect on the susceptibility of residents to HIV/AIDS of their socioeconomic status. We capture socioeconomic status by a binary variable measuring whether or not a household is in absolute poverty.

REVIEW OF THE LITERATURE

The link between poverty and vulnerability to communicable diseases is well established and documented. Nonetheless, the microeconomic aspect of "who is most likely to die of AIDS" (Ainsworth and Semali, 2002) - the rich or the poor - is a relatively recent and debatable issue. Findings on the relationship between poverty and degree of vulnerability to hiv/aids are not universal. Many studies argue that the poor are the most susceptible. Poor and uneducated people are more likely to contract sexually transmitted diseases since they are deprived of the right to information on risk behaviour, are too illiterate to understand prevention messages, have less access to quality services (Bhargava and Satihal, 2005) and lack the power with respect to negotiation of safer sex including condom use (Brook et al, 2006). Even when those information, education, and counselling activities reach the poor, they are often irrelevant and inoperable given the reality of their lives (Mbirimtengerenji, 2007). Booysen and Summerton (2002) empirically find that poor women are less likely to be knowledgeable about HIV/AIDS and more likely to engage in risky sexual behaviour. Residential arrangements of the poor do not often afford privacy for sexual intercourse within households (Zulu et al, 2002) leading to early sexual debut by children. When the poor consider migration as a 'flight from poverty' (Mbirimtengerenji, 2007), they often finish in commercial sex work (van Donk, 2002). In general, poverty makes people hopeless so that they may sacrifice the future to ensure a better today (Tladi, 2006).

However, other studies argue otherwise – the non-poor are more likely to contract the virus. The rich, usually men, may 'purchase' the HIV in a different manner. They may be at higher risk of infection due to multiple and concurrent sexual partnerships (Tladi, 2006; Madise et al, 2007). The well-off, who can afford to lead mobile lifestyles, may interact sexually with others thereby being vulnerable to the virus. Another reason why wealthier people may have higher HIV prevalence is because they may live longer due to better nutrition and access to antiretroviral therapies (Madise et al, 2007). Similar proposition holds true for women as non-poor women are believed to have an exposure to risky sexual behaviour (Filmer, 2002; Ainsworth and Semali, 2002). After assessing the

behavioral risk factors for HIV/AIDS in and around Addis Ababa and Nazareth cities of Ethiopia, Nedi et al (2002) find that the majority of the sample had non-regular sexual partners, which was higher among students. Their study reveals that the educated, who are usually non-poor, are at a higher risk of contracting the virus.

Previous studies do not provide sufficient evidence on the precise effect of poverty on vulnerability to HIV infection. In addition, out of 36 studies reviewed by Wojcicki (2005), fifteen found no association between socioeconomic status (SES) and HIV infection, twelve found an association between high SES and HIV infection (negative link between poverty and infection), eight found an association between low SES and HIV infection (positive link between poverty and infection) and one was mixed. A review by Gillespie *et al* (2007a) was no different. Hence, contextual and locational specificities are of paramount importance. Furthermore, the majority of earlier studies used a single measure of sexual behaviour of heads of households like condom use, number of sexual partners, age at first sex, *etc*. However, it is important to see whether the amalgamation of these and other measures are influenced by the socio-economic status of the household. This study, therefore, contributes to existing knowledge by developing a variable measuring the overall vulnerability of a household to HIV, while at the same time retaining the traditional proxies, thereby relating them to poverty status.

OBJECTIVES

- To assess the extent of poverty and vulnerability to Hiv/aids in Bahir Dar City; and
- To find out whether poverty contributes to the risk of Hiv infection.

HYPOTHESIS

We hypothesize that the urban poor are more HIV-vulnerable than the non-poor as poverty accelerates the probability of HIV infection and enforces them to engage in perilous sexual behaviour.

RESEARCH METHODOLOGY

The study is based on household-specific primary data. Structured questionnaires were prepared in the local language, Amharic, and were filled out by well trained members of associations of PLWHA and socially and academically active undergraduate economics students. The questionnaire asked about, among other things, general household characteristics, socio-demographic and economic issues, and household reproductive health knowledge and sexual behaviour. The nature of the problem demanded the employment of a mix of stratified, purposive and simple random sampling techniques. According to the current administrative structure of the city, Bahir Dar has nine *kebeles*. (*Kebele* is the smallest administrative unit in Ethiopia.) We initially stratified them as residential, slum-residential, slum-business and mixed-slum based on our observation. Then, out of five mainly residential *kebeles* a random sample of two were selected and from two residential-slum *kebeles* one *kebele* was chosen randomly. One business-slum and one slum-mixed *kebeles* were also picked at random making the total number of sample *kebeles* five. Sample households in the sample *kebeles* were next selected randomly. The sample size allocated to each sample *kebele* ranges between 20 and 25 depending on its population size. A total of 120 households were interviewed and with a response rate of 97.5 percent, three household heads provided worthless information.

Both descriptive and econometric methods of analyses were then employed. In order to assess the extent of household poverty, their vulnerability to HIV/AIDS and the characteristics of sample households, we used various tools in descriptive statistics. The econometric analysis, which estimated three equations using logit, was applied to primarily find out if poverty has played any role in HIV/AIDS vulnerability.

The general econometric model of the study has the form:

$$Y = \alpha + \gamma(Poverty) + X\beta + \varepsilon$$

Where

Y represents dependent variables, taking three different sexual behaviour-measuring variables: age at first sex, non-regular use of condoms, and general HIV vulnerability; all are used in their binary form;

$Poverty$ represents the poverty status (poor or non-poor) of a household, the variable of interest;

X represents a vector of other household characteristics (control variables), including age, sex, educational background, marital status, migration dummy, media exposure, area of residence (slum or non-slum), *etc*;

α and γ are parameters, and β is a vector of parameters to be estimated; and

ε is an error term.

Ultimately, three binary logistic regressions were run, one for each of the three dependent variables.

The first dependent variable *'Age at first sex'* is a dummy constructed from the initially collected data on the age of the household head at sexual commencement by considering sexual commencement at 18 years or above as normal (less risky). The other dependent variable '*Non-regular condom use'* is again generated as a dummy variable in favour of non-regular users. Those ever having sex reported the frequency of condom use with their partners as never, sometimes or always. If a household head is married and had no more than one sexual partner, despite they reported non-regular use of condom, the household is perceived as less risky and hence was given a value of 0. The third dependent variable '*Overall HIV vulnerability'* is the major dependent variable, which is also a dummy, and constructed from the above three and other variables. Firstly, we generated an HIV vulnerability score from the following variables: non-regular use of condom while being not married; age at first sex was less than 18 years; had sex with more than one partner; common use of razor blades; and had sexual intercourse in the 12 months before the survey while being not married. For each of these variables where 'yes' responses were found, we added 1 to the score (indicating more risky behaviour), but subtracted 1 otherwise (indicating less risky behaviour). Next, a frequency distribution and a histogram with a normal curve were fit for the score. Almost half (49 percent) of the respondents had a score of -5, while the remaining had a score ranging between -3 and 1. This distribution information was finally used to categorize the vulnerability score into two groups: highly vulnerable (risky) (referring to those with score between 1 and -3) and less vulnerable (less risky) (referring to those with score of -5). This grouping produced a dummy variable, overall (HIV) vulnerability, taking 1 for the highly vulnerable (risky) households and 0 for the less vulnerable (less risky) ones.

The variable of interest, poverty status, is generated as follows. First, expenditure data on various major items were summed up to give household total monthly expenditure. This was next converted to the daily per capita basis. Considering the standard 1 USD-per-day line of poverty and the then average exchange rate of the dollar with the birr (1 USD=15 Ethiopian birr), we finally computed the poverty status as a binary variable giving 1 for the poor.

In line with our previous hypothesis, the coefficient estimate as well as the marginal effect of the poverty status variable on all of the three indicators of vulnerability to HIV/AIDS is expected to be positive. We, in other words, anticipate that being poor reduces the timing of sexual debut, makes people not to regularly use condoms and generally forces them to act in such as way that they will be highly prone to HIV infection.

RESULTS AND DISCUSSION

CHARACTERISTICS OF THE SAMPLE

The background characteristics of the survey respondents are shown in *Table 1*. More than half (56%) of the total 117 respondents are men. The age distribution of the respondents shows that over 60% of the sample is less than 50 years of which the adult population (30-49) constitutes the lion's share. As the data reveals, under the age of 30, the proportion of females is significantly higher than their male counterparts. As close as half of the respondents (48%) have 4-6 family members. Marriage is believed to have an instrumental role to skirmish the HIV/AIDS pandemic. Our data shows that the great majority (59%) of the

respondents are married. However, the proportion of households who are either widowed or divorced need not be undersized as they comprise as high as 30% of the responding households. This implies that approximately in one of three households living together is beaten by social and natural circumstances. The rate of divorce or widowing significantly varies by gender. By and large, 59% of women but only 8% of men are more likely to miss their spouse by death or divorce. Such undesirable consequences may lead female-headed household of the City to engage in businesses which are risky to the infection of the deadly disease or they may be forced to have multiple sexual partnerships. This may be attributed to the fact that participation of women in the labour market or other income generating schemes (58.82%) is still lower relative to men. Thus, women remain economically dependent on males and the economic crises of family separation (especially due to death of husband or divorce) and its acceleration to HIV infection are likely to be higher.

Education is considered as the most powerful tool to capacitate and broaden society's cognitive and analytical skill for better and meaningful way of life generally and for battling against the HIV/AIDS epidemic specifically. Nonetheless, the educational attainment of the sample households is low as over half of them achieve below secondary education (illiterate and primary education). Only one in every five and one in every four households does have secondary and tertiary education respectively. The disadvantageous position of women is also exacerbated by their poor educational achievements. The proportion of female illiterates (43%) is much larger than that of males (15%) while almost similar distance exists in the reverse direction when compared with achievement above secondary education. Only less than 8% of women had access to further their formal education above secondary level compared to 39% of men. Because of the difficulty of estimating households' income directly, segregated expenditure data was collected and used to proxy income. The poverty incidence figure then computed is so high. More than three-quarters of the sample households consume below the one-dollar-per-day line. Evidently, larger segments of female-headed (over 80%) than male-headed (over 75%) households live in absolute poverty.

TABLE 1: SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Characteristics	*Category*	*Percent*		
		Male	*Female*	*Total*
Sex		56.41	43.59	
Age	15–29	6.06	27.45	15.38
	30–49	46.97	45.10	46.15
	50–65	28.79	23.53	26.50
	65+	18.18	3.92	11.97
Household Size	1–3	21.21	54.90	35.90
	4–6	56.06	37.25	47.86
	6+	22.73	7.84	16.24
Marital Status	Married	81.82	29.41	58.97
	Divorced	3.03	27.45	13.68
	Widowed	4.55	31.37	16.24
	Single	10.61	11.76	11.11
Educational Level	Illiterate	15.15	43.14	27.35
	Elementary	28.79	25.49	27.35
	Secondary	18.18	23.53	20.51
	> Secondary	37.88	7.84	24.79
Employment Status	Working	69.70	58.82	64.96
	Not Working	30.30	41.18	35.04
Poverty Status*	Non-poor	24.24	19.61	22.22
	Poor	75.76	80.39	77.78

**Based on the 1 USD=15 birr line.*

Source: *ComputedfromAuthors' Survey, August 2010*

HOUSING CONDITION AND POSSESSION OF UTILITIES

Housing is a big social and economic challenge in many urban areas of Ethiopia. Although more than half of the respondents in Bahir Dar City have their own house at latter ages, as high as 44% of the respondents are still unlucky to enjoy the utility of house ownership. A noticeable proportion of the respondents are therefore forced to still reside in slum areas of the City. Given a mean family size of 4.47, one third of the households are living in a house with no bed room and a single room is a bed room for at least two people.

TABLE 2: CONDITIONS OF HOUSING AND OWNERSHIP OF OTHER UTILITIES

Housing		
Characteristics	***Category***	***Percent***
Have own house	Yes	56.41
	No	43.59
Location	Slum area	43.59
	Non-slum area	56.41
Number of rooms	1-2	31.82
	3	31.82
	Over 3	36.37
Utilities and other asset possessions		
Have electric service/line (own)	Yes	59.83
	No	40.17
Have pure water supply service/line	Yes	64.96
	No	35.04
Have private toilet	Yes	57.26
	No	42.74
Have Television	Yes	73.5
	No	26.5

Source*: Computed based on Authors' Survey, August 2010*

Data were collected on the availability and possessions of electricity, water service, toilet facility and durables such as television. The proportion of households with own electricity is 60% and the rest of the respondents do not have a contract with the power supplier and get electric service from indirect sources. Consumption of pure water from own source (65%) is slightly better than power supply though sizable proportion (35%) of the sample households are still dependent on other households. Availability of own toilet at household level is used to look at the sanitation facility of respondents. In this regard, 43% of the households do have shared toilet. Possession of these essential facilities by and large influences the privacy and quality of life of the residents. Three of the four households do have a television set and this accession could be the reason why many households generate public information through TV and radio. In general, considerable proportion of the sample households are deprived of the utility they could generate from the City. It is not thus difficult to see how rampant is the extent of poverty among the sample households of Bahir Dar City.

SEXUAL BEHAVIOUR, HIV/AIDS KNOWLEDGE AND POVERTY

All of the approached respondents do experience sexual intercourse. As shown in *Table 3*, about one third of them had sex before they celebrated their 18th birth day. Earlier sexual initiation is believed to be more risky in terms at least of HIV/AIDS infection. The proportion of the poor who initiate sex before 18 is almost twice of that of the non-poor. About 91% of the respondents are loyal to their sexual partner. Only 22% the respondents use condom consistently. But, the remaining either totally abandon it (67%) primarily because they are married or use it occasionally (11%). Differences seem to exist between the poor and the non-poor regarding use of condom. While more of the non-poor occasionally use it, more of the poor totally abandon it.

TABLE 3: SEXUAL BEHAVIOUR AND HIV/AIDS KNOWLEDGE BY POVERTY STATUS

Characteristics	*Category*	*Percent*		
		Non-poor	*Poor*	*Total*
Ever had a sexual partner	Yes	100.00	100.00	100.00
	No	0.00	0.00	0.00
Age at first sex	18 or above	80.77	64.84	68.38
	Below 18	19.23	35.16	31.62
Had sex in the past twelve months	Yes	73.08	70.33	70.94
	No	26.92	29.67	29.06
Had sex with more than one partner	Yes	11.54	8.79	9.40
	No	88.46	91.21	90.60
Condom Use	Never	63.16	68.25	67.07
	Sometimes	15.79	9.52	10.98
	Always	21.05	22.22	21.95
Don't use razor in common	Yes	84.62	92.31	90.60
	No	15.38	7.69	9.40
Don't eat with HIV positive people	Yes	0.00	7.69	5.98
	No	100.00	92.31	94.02

Source*: Computed based on Authors' Survey, August 2010*

To examine the knowledge of respondents about HIV/AIDS, some simple but imperative questions were raised; for instance, over 90% of the respondents abandoned sharing of razor blades. Households' awareness in this regard is promising and the poor have shown more progress than the non-poor. Culturally, Ethiopians enjoy eating food together. Nevertheless, after the incidence of the HIV/AIDS catastrophe, observable discrimination against HIV positive people has become widespread. But, as our finding reveals, most of the respondents (94%) reported that eating together with HIV victims has nothing to do with their HIV vulnerability. Thus, there is an essential improvement in the knowledge and behaviour of households. All of the non-poor, except very few poor, have enjoyed that improvement.

EFFECT OF POVERTY ON THE VULNERABILITY OF HIV INFECTION

The marginal effects of the estimations, after the three logit regressions of the basic parsimonious model, are reported in *Table 4*. Four of the seven explanatory variables included in the model are found to statistically determine the age at which sexual relations initiate. According to the estimates, those household heads that are currently unmarried had a higher probability of early sexual initiation compared to those that are married. It has widely been recognized that education has the importance of delaying early commencement of sexual activity. As can be observed from the negative sign attached to the marginal effect of educational level, the higher the educational achievement the lower will be the likelihood of early sexual start-up. Accordingly, each extra year of schooling reduces the probability of sexual initiation under the age of 18 years by 3 percent. Similar evidence was found in Kenya as school attendance reduced the likelihood of early initiation of sexual activity and occurrence of premarital intercourse among adolescents (Mensch et al, 2001). We also estimated that the marginal effect of age of the household head on the probability of early sexual commencement is negative. It is also found, other things kept constant, that the likelihood of earlier sexual initiation changes positively with larger family size. Against our expectation, , however, the effect of poverty on vulnerability to HIV infection due to earlier sexual initiation is statistically insignificantly implying that the poor and the non-poor may not be dissimilar in being initiated for intercourse at an earlier age.

Only three explanatory variables - marital status, age and slum residence – significantly determine the probability of non-regular condom use. Poverty status, educational level, HIV knowledge and household size are found not to have any statistically noteworthy impact on condom use behaviour. Slum residence and being not married directly influence the likelihood of irregular use of condoms. Ceteris paribus, the negative sign of the age variable shows that younger people are slightly likely to be non-regular condom users. However, unmarried household heads are more probable in not using condoms regularly. Though the poor and the non-poor do not seem to be different in their use of condoms, people who reside in slum areas exhibit higher irregularity in their condom usage compared with those who reside in non-slum areas. Since slum residential arrangements do not afford privacy in sexual relationships, 'unplanned' intercourses without condoms may become common.

TABLE 4: EFFECT OF POVERTY ON VULNERABILITY TO HIV INFECTIONMARGINAL EFFECTS AFTER LOGIT REGRESSION

Independent variable ↓	*Dependent variable*		
	Age at first sex	*Non-regular condom use*	*Overall vulnerability*
Poverty status	– 0.018	– 0.043	– 0.234*
(poor=1)	(0.1369)	(0.0786)	(0.1328)
Marital status	0.267**	0.223***	0.452***
(not married=1)	(0.1060)	(0.0846)	(0.0989)
Educational level	– 0.028***	0.003	– 0.010
	(0.0093)	(0.0048)	(0.0111)
Age	– 0.008*	– 0.006**	– 0.013**
	(0.0043)	(0.0026)	(0.0053)
HIV knowledge	– 0.155	– 0.022	– 0.308**
(high=1)	(0.1258)	(0.0683)	(0.1298)
Household size	0.056*	0.025	0.089**
	(0.0305)	(0.0156)	(0.0389)
Slum residence	– 0.017	0.197**	0.099
(slum=1)	(0.1037)	(0.0788)	(0.1256)
* , ** and *** show significance at 10%, 5% and 1% levels respectively. Standard errors in parentheses.			

The overall HIV vulnerability variable is more comprehensive than the above measures of risky sexual behaviour. Similar to the previous results, those that are either single, divorced or widowed show behaviours that put them at a higher risk of contracting the virus. Other important determinants of the probability of vulnerability to HIV are age of the head and HIV knowledge. Younger residents are once again more exposed than older ones. Not surprisingly, being knowledgeable about HIV safeguards vulnerability. These reveal that the youth are aware of HIV/AIDS but are susceptible implying the importance of investing on other things than mere awareness-creating activities. It has been estimated that the poor are less vulnerable than the non-poor as shown by a significant and negative marginal effect of the poverty status variable.

CONCLUSIONS AND RECOMMENDATIONS

This study has analysed data of 117 randomly selected households and run logit regressions in an effort to measure the effect of poverty on vulnerability to HIV/AIDS infection in Bahir Dar City of North-western Ethiopia. It is found that the poverty situation in the sample areas is pervasive as captured by lower daily average consumption expenditure and possession/use of various utilities and durables. We find that the probabilities of irregularity in condom use and initiating sexual intercourse at an age level lower than 18 years do not significantly vary with poverty status. Other factors than being in poverty determine condom use and early initiation to intercourse. This does not however mean that socioeconomic status does not influence the risk of contracting HIV; it does so via a combination of these and other channels. We have used the overall vulnerability variable to capture that amalgamation. Our estimation results, in opposition to our hypothesis, show that the non-poor are generally more predisposed to the virus than the poor. These findings justify some steps to be taken:

- The City's poverty situation has to be tackled with the proper implementation of the national poverty reduction strategy and with local government and community participation.
- The local government should work hard to reduce slum areas, with strong collaboration with the residents and stakeholders.
- Special emphasis must be given to the urban youth and women.
- Participation of targeted populations in various undertakings like urban agriculture may bring a difference.
- Housing problems in the City need to be solved though devising alternative, user-targeted and pro-urban poor policies.
- The sexual behavior of households which make them vulnerable to the HIV pandemic need to be targeted in various ways.
- Audience-targeted reproductive health information and education is imperative especially to women who are younger or have an infant marriage to mitigate the risk of HIV infection.
- Besides to the health information and communication strategies, inception of adult education may be vital for the fruition and sustenance of HIV prevention and control mechanism.
- While education and knowledge continue to be crucial to curtail the risk of expansion, investing on other things than mere awareness creation activities is also vital; working with development partners in this regard may be called for.
- The youth must also be held busy in productive activities.

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